

AMENDMENTS TO THE CLAIMS:

Complete Listing of Claims

- 1 1. (currently amended) ~~A~~ A current limiting circuit for a switch comprising:
 - 2 a. a switch connected to a power supply and a load;
 - 3 b. a shunt resistor having a first and second terminal, with the first terminal connected to the switch; and
 - 4 c. a control circuit connected to the second terminal of the resistor and to the load side of the switch;
 - 5 d. wherein the control circuit monitors the voltage across the switch and the voltage across at the shunt resistor and limits the current through the switch when exceeding a current limit set by the shunt resistance as determined by the voltage across at the shunt resistor and the voltage across at the switch.
- 1 2. (original) The circuit of claim 1 wherein the first terminal of the resistor is connected to the supply side of the switch.
- 1 3. (original) The circuit of claim 1 wherein the first terminal of the resistor is connected to the load side of the switch.
- 1 4. (original) The circuit of claim 1 wherein the switch is connected to the low side of the supply.

1 5. (original) The circuit of claim 1 wherein the switch is connected to the high
2 side of the supply.

1 6. (original) The circuit of claim 5 further comprising a current source that
2 sets a bias voltage drop across the shunt resistor and the current source
3 is a linear temperature dependent source to compensate for variation of
4 switch on resistance (RDS(on)) versus temperature.

1 7. (original) The circuit of claim 1 wherein the switch is a N-channel FET
2 transistor.

1 8. (original) The circuit of claim 1 wherein the switch is a P-channel FET
2 transistor.

1 9. (original) The circuit of claim 1 wherein the circuit is incorporated in an
2 integrated circuit except for the shunt resistor which is an external resistor.

1 10. (original) The circuit of claim 3 wherein the circuit is incorporated in an
2 integrated circuit except for the shunt resistor and an adjustment resistor
3 connected to the current source, which are external resistors.

1 11. (currently amended) A An current limiting circuit for a MOS transistor
2 switch for a hot swap board application comprising:

3 a. a switch connected to a power supply and a load;

4 b. a shunt resistor having a first and second terminal, with the first
5 terminal connected to the switch; and

6 c. a control circuit connected to the second terminal of the resistor and
7 to the load side of the switch;

8 d. wherein the control circuit monitors the voltage across the switch
9 and the voltage across at the shunt resistor and limits the current
10 through the switch when exceeding a current limit set by the shunt
11 resistance.

1 12. (original) The circuit of claim 11 wherein the first terminal of the resistor
2 is connected to the supply side of the switch.

1 13. (original) The circuit of claim 11 wherein the first terminal of the resistor
2 is connected to the load side of the switch.

1 14. (original) The circuit of claim 11 wherein the switch is connected to the
2 low side of the supply.

1 15. (original) The circuit of claim 11 wherein the switch is connected to the
2 high side of the supply.

1 16. (original) The circuit of claim 15 further comprising a current source that
2 sets a bias voltage drop across the shunt resistor and the current source
3 is a linear temperature dependent source to compensate for variation of
4 switch on resistance (RDS(on)) versus temperature.

1 17. (original) The circuit of claim 11 wherein the switch is a N-channel FET
2 transistor.

1 18. (original) The circuit of claim 11 wherein the switch is a P-channel FET
2 transistor.

1 19. (original) The circuit of claim 11 wherein the circuit is incorporated in an
2 integrated circuit except for the shunt resistor which is an external resistor.

1 20. (original) The circuit of claim 11 wherein the circuit is incorporated in an
2 integrated circuit except for the shunt resistor and an adjustment resistor
3 connected to the current source, which are external resistors.